

The Physikalisch-Technische Bundesanstalt (PTB) is the National Metrology Institute of the Federal Republic of Germany with scientific and technical service tasks. It furthers progress and reliability in metrology for society, the economy and science. The QUEST Institute for Experimental Quantum Metrology is a joint institution of Leibniz Universität Hannover and PTB Braunschweig. The research revolves around quantum logic techniques for spectroscopy, optical clocks and tests of fundamental physics with trapped ions.

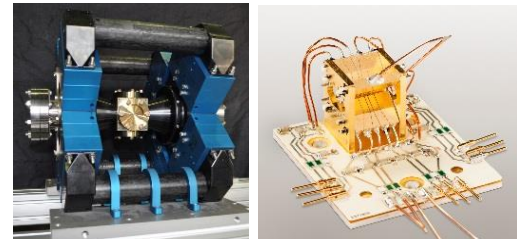
We have positions available for the following projects:

Optical clock based on highly charged ions (Braunschweig)

- Developing optical clocks based on HCIs with a fractional frequency uncertainty of 10^{-18}

Aluminium - Calcium quantum logic clock for high frequency accuracy (Braunschweig)

- Continued development with focus on automation and frequency comparison with other clocks



Left: electron beam ion trap, used for production of highly charged ions **Right:** cryogenic linear ion trap, used to store cold ions for spectroscopy

Calcium multi-ion clock for novel interrogation schemes (Braunschweig)

- Investigation of multi-ion clock properties
- Development of entanglement enhanced interrogation schemes

Transportable Al⁺ optical clock (Hannover)

- Development of compact optical setups with automated optimisation of operating parameters and integration of the resulting hardware in a transportable Al⁺ clock
- Participation in the automation of the clock for continuous operation and characterisation of the clock
- Participation in in-field measurement campaigns outside the laboratory environment for relativistic geodesy

Master and Bachelor students are always welcome. PhD and PostDoc positions are initially limited to three years; an extension of the contract is possible. You will be part of an enthusiastic international team at one of the world's leading research institutions with an excellent infrastructure. We offer structured education and training together with a large international network of partners within the cluster of excellence "QuantumFrontiers", the collaborative research centres "DQ-mat" and "TerraQ", the QVLS-Q1 project, and the ERC Advanced Grant "FunClocks". PTB is committed to a family-friendly working environment with several amenities, such as on-site day-care and canteen.

Further information about the position and the project, along with a link to the application form, can be found using the QR Code below or at <https://www.quantummetrology.de/home/jobs/>.

Contact:

Prof. Dr. Piet O. Schmidt
Tel.: +49 (0)531 592 4700

Dr. Steven King
Tel.: +49 (0)531 592 4764

Dr. Stephan Hannig
Tel.: +49 (0)531 592 4705

